

Appendix 7

Diver Reefing Requirements

The scope of work for the diver readiness and preparations for artificial reefing are contained herein. This scope of work is in addition to the remediation/cleaning work related to environmental issues. This scope of work has been prepared based on a detailed survey of the USS Kittiwake during May 9 – 12, 2005. .

Vessel: ex-USS Kittiwake, 251' submarine rescue vessel ASR-13

- Chanticleer Class Submarine Rescue Vessel
- Displacement: 2,045 tons (full load)
- Length: 251'4"
- Beam: 42' Draft: 16'
- Speed: 14.5 knots (max); 10 knots (econ)
- Armament: 2 3"/50 DP, 8 20mm, 4 DC tracks
- Complement:
- Diesel-electric engines, single screw, 3,000 h.p.
- Built at Moore, Savannah and commissioned 1944

All scrap metals and materials, equipment and the like (non HAZMAT) that is to be removed (that is not already specified herein) shall be identified by DMG to CITA in advance and agreed upon. Removal of the items shall be at the contractors expense. The scrap value of any salvage items shall be shared on the basis of 50/50 with CITA. Contractor will provide a bill of sale for all material that is disposed of for verification purposes by CITA. Funds from scrap value shall be deducted from the total owed to DMG.

Overriding Guidelines:

In the event that any items of the following list represent an environmental concern, a diver safety concern or are not in accordance with the BMP, then the following guidelines override the list of items to remain onboard the Kittiwake or are to be remediated if possible or removed.

Some items on the following list may be removed/remediated prior to the dive reefing requirements phase (during the environmental remediation phase of the project). If so, those items, if containing HAZMAT, will be treated as HAZMAT, handled, transported and assigned to only authorized, licensed personal with the credentials to handle the specific type of HAZMAT. The following list is for surety that in addition to HAZMAT, none of the following items remain on board or items that should remain on board as specifically noted. The items that remain on board will not contain any HAZMAT or if they did, will have been properly remediated of any HAZMAT.

IN ALL CIRCUMSTANCES, ANY ITEMS THAT REMAIN ON BOARD THAT COULD CONTAIN HAZMAT MUST BE REMEDIATED AS HAZMAT.

Any furniture items that are to remain on the Kittiwake for sinking will be metal only (no wood) and securely attached/fastened to the Kittiwake, or if not possible, they will be removed.

Any items that could present a risk of becoming detached during the sinking process, or shortly thereafter, will be identified and will be either attached properly or removed.

All items that remain on the Kittiwake for sinking will be negatively buoyant.

All items that would present a diver safety issue, entanglement issue or small confined space safety concern will be removed.

For items such as refrigerators, freezers, cold storage units or temperature regulated equipment, thermostats or temperature gauges will be removed to eliminate any mercury remaining on the Kittiwake.

The BMP will be used as reference on any decisions, along with visual inspections, to determine any modifications to this list.

1. General ship-wide reefing plan:

- a. All lagging is to be removed
- b. All electrical cable is to be removed
- c. All materials made of wood are to be removed, except for the orange buoys as noted following
- d. All plastic is to be removed
- e. All fire and smoke alarms/detectors to be removed
- f. All liquid filled gauges will be removed or drained and cleaned
- g. All mercury containing materials are to be removed
- h. All radio active materials are to be removed
- i. All fire fighting equipment is to be removed (could contain mercury or americium) (portable fire extinguishers (current inspection) can remain on board if needed and will be removed prior to sinking)
- j. All ceilings and walls are to have obtrusive obstacles, hooks, brackets and the like above 3 feet from the deck/floor cut flush to prevent diver entanglements
- k. All portals, windows and hatches are to be removed
- l. All weather doors (external) are to be removed
- m. All interior hatches and doors are to be removed
- n. All foam and Styrofoam to be removed
- o. All thin metal and wood paneling to be removed
- p. All carpeting to be removed

- q. All light bulbs to be removed
- r. All florescent lights and fixtures to be removed
- s. All stairwells except as specifically noted to be removed
- t. All cuts & openings both internal and external are to have smooth rounded edges
- u. All sheet metal to be removed
- v. All hinges for doors must be cut flush to avoid possible diver entanglement
- w. All filing cabinets to be removed
- x. All vents stay, but all ductwork to be removed
- y. All steel locker boxes stay unless in poor condition and rusting badly
- z. All turnbuckles stay
- aa. All rooms with any weather access must have holes cut in all corners for rain/sea drainage during towing and venting
- bb. All hatches removed must be covered for towage and watertight integrity insured
- cc. All stairwells below deck to be removed; All stairwells above deck to remain as long as they are in good condition and intact
- dd. All space vents must be clear – no balls inside – for sinking purposes
- ee. All tank vents remove or cut off all caps
- ff. All escape vents – open or free up
- gg. On all exterior hatches and dive cutout that will be removed in Cayman, weld on pad eyes and mark all external cutouts
- hh. Remove all tank sounding plugs
- ii. Diver access cutouts to be approximately every 50 feet or as reasonable, with the goal to allow 2 entry/exit points into any area and natural light to penetrate the area
- jj. All paint to be scraped/blasted so that no loose paint chips are onboard the vessel. Paint pcb sampling is to be done in advance on the work remediation work effort to ascertain that the paint does not contain any pcb's. Sampling results are to be provided to CITA.

2. Bridge:

- a. All windows removed
- b. Steel wheel installed. DMG to provide and weld onto helm
- c. Flooring to stay in bridge area
- d. Chart table to be removed

3. Bridge/Binocular Locker:

- a. Overhead cleanup - Ceiling to be cut flush, free of any possible diver entanglements
- b. Filing cabinets removed
- c. Instrumentation on walls to stay, gutted of all wiring
- d. All lights stay

4. Navigation Room behind Bridge:

- a. Leave all switches, remove all wiring and gut
- b. Air conditioning units removed
- c. Radar to stay, gutted of hazmat

- d. Second access for diver entry/exit to be cut out – vertical access

5. Outside Fore top deck:

- a. Radar array to remain – gutted as required for hazmat
- b. Remove empty framing box
- c. Flag storage locker – cut middle rungs out for access
- d. Remove center storage box
- e. Tow drain holes in corners

6. Outside top decks:

- a. Wooden hand railing removed
- b. Lockers stay
- c. Fiberglass antennas removed
- d. 3 flare boxes stay
- e. Outside light fixtures stay
- f. Anti-aircraft mounting turrets stay (options for mounting a gun are welcomed)
- g. 6kw Generator Set to be removed
- h. Orange Buoys stay – decaying wood and rubber to be removed; 8 inch holes to be cut in buoys for sea water access during sinking (top and bottom)
- i. Fire Hose guns stay, to be remounted (copper content)

7. Outside Stern Decks:

- a. Navigation lights removed – to CITA
- b. Crane/Gantry/Pulleys stay – all wires removed
- c. Winches to stay
- d. Electrics Motors – cleaned and stay
- e. Life Boat holders – wood to be removed
- f. Spars / Booms / Wisker Poles – reinstall appropriately and weld in place downwards
- g. Stairwells – stay as long as intact/good condition (aluminum)
- h. Open all vent coverings
- i. Tank racks – stay (aluminum)
- j. Transformer – remove (belongs to JRRF)
- k. Cut underneath transformer for vertical access
- l. 2 Starboard anchors stay; 2 anchors to be added and placed on stern deck (anchors from Marad)
- m. Chain and windlass stay plus all cleats
- n. Remove covers on stern hatches and chain lockers
- o. Telephone booth to stay – door removed
- p. Spools stay
- q. Outside aluminum (light-weight) lockers removed
- r. Dive Bell to be installed if one can be found
- s. Deck hatches to be removed
- t. Locker, hoist, red boxes to stay
- u. Aluminum boxes to be removed
- v. Brake release on anchors to be in working condition

- w. Install chain stoppers for tow
- x. MARAD to supply 6 additional shots of chain, to be placed on stern deck near anchors
- y. Free up shackles on stern anchors
- z. For a 6-point anchor, all anchors must have connecting shackles, chains, counter-links and strong pad eyes welded to mid-ship (port and starboard) and bow. Stern cleats are fine as they are.

8. Exhaust Stack:

- a. Gutted – empty with clear access from top of stack to engine room

9. Main Deck (second):

- a. Remove blowers
- b. Cut out 2 front grills
- c. Cleaning lockers to be removed
- d. Garbage Comp to be removed
- e. Compressor to be removed
- f. Stairwells remain as long as in decent condition and intact

10. Radio Transmitter Room:

- a. All hatches/doors removed
- b. Stand removed
- c. Hole cut in starboard side for exit/entry of divers
- d. Cut hole into room behind
- e. Brass power cutout switches and handles – CITA

11. Officer Quarters:

- a. Suspended ceiling removed
- b. Paneling & carpets removed
- c. Hatches cutout
- d. Cut hole in shower for light access

12. Captains Quarter:

- a. Bunk to stay

13. Recompression Chamber Room:

- a. 2 Patterson Kelley Co. (E. Stroudsburg, PA) dated October 1945 recompression chambers to stay
- b. Remove plugs on chamber windows
- c. Clearance for divers- remove heliox tanks on sides
- d. Weld internals and external airlock hatches in chambers in open position
- e. Gauges to stay as possible on walls, no overhead diver entanglement obstructions

14. Tool Room (forward of Recompression Chamber):

- a. Major tools attached to remain

15. Laundry Room:

- a. Iron board to stay, soft goods removed
- b. Heads, showers to stay (stainless steel) all doors off showers
- c. Urinal & sinks to be removed
- d. Dryer to stay; compressor to be removed; door off dryer

16. Officers Mess:

- a. Tables and seats stay; edges to be rounded (steel)
- b. All soft goods removed
- c. All doors off kitchen cabinets, shelving, ovens, etc. (stainless steel)
- d. Hatch to stack cut open and larger; rounded edges
- e. Kettles to stay (stainless steel)
- f. All over head venting to be removed (stainless steel)
- g. Compressors in all fridges to be removed

17. Officers Lounge:

- a. All carpet and furniture to be removed
- b. Table to stay
- c. Tin paneling to be removed
- d. Head – all doors off showers, heads
- e. Remove urinal

18. Officers Quarters:

- a. Linoleum tile to remain intact unless loose or rotting (12x12 tile)
- b. Open quarters into 1 large room – removing interior walls
- c. Remove all closets
- d. Leave 1 or 2 bunks (steel) to give the room a definition

19. Sonar Room:

- a. Open access hole up (above and vertical) wider for diver access
- b. Everything removed
- c. Create second exit/entry access point into room

20. Bow – Cargo & Windlass access:

- a. Main hatch removed
- b. Stairwell / ladder removed
- c. Overhead cages removed
- d. Caging / pipes cut as appropriate for diver access
- e. Anchor Chain to stay (approximately 8 shots)
- f. Windlass engine removed
- g. Hole cut in starboard hull; patch for towage
- h. Hole cut to below deck 6x6 feet approximately

21. Below Main Deck – General Offices:

- a. Stainless Steel shelves stay as attached securely on walls

22. Sick Bay:

- a. Sink stay (stainless)
- b. Walls removed to open up area
- c. Filing cabinets, shelving to be removed unless secure and solid

23. Cold/Dry storage room:

- a. Compressors removed
- b. S/S Coils, fridges, freezers stay, doors removed
- c. Center hole cut for access overhead for divers
- d. Solid lead ballast encased in concrete stays
- e. Shelving removed
- f. Steel piping stay
- g. Remove cage walls for open access
- h. All hatches removed
- i. Access to room located behind bulkhead

24. Lounge/Gallery & Hospital Chief rooms:

- a. Port & starboard hull cutout for diver access
- b. Lockers removed
- c. Tables, chairs (steel) stay; soft goods, cushions removed from them
- d. Several crew bunks to stay – other removed for more open access
- e. Turn 2 smaller rooms into 1 – removing walls
- f. 12x12 tile on floor to be removed (approx. 6' x 8' area)

25. Safety Office Room: 'B McKollar':

- a. Remove caging between this room and barber shop to open up area for divers

26. Gyro Room:

- a. Remove Gyro – CITA
- b. Remove tile floor
- c. Panel boxes to stay
- d. Forward cutout on wall of Gyro room BH36

27. Electronic Workshop room:

- a. Remove cage walls
- b. Remove fresh water tank access cover – unless needed for ballast
- c. Port and starboard hull access cut open – behind metal shelving

28. Ordinance Storage Room:

- a. Storage shelves to stay – remove doors
- b. Port and Starboard hull access cut open
- c. Lower shelving to be removed
- d. Remove small area of floor tiling
- e. Remove compressor

29. Ammunitions Magazine Room:

- a. Port & starboard hull cutout for diver access
- b. Removed metal racks
- c. Remove 3 doors
- d. Open 3 small rooms up into 1 larger room

30. Air Bank Storage Room: ER46

- a. Air bank storage bottles to stay – 6” - 8” holes cut in top to allow water to enter for sinking; bottles to be filled with potable treated water
- b. Cut holes in top of Astro Paks (3) as an air escape vent
- c. Port & starboard hull cutout for diver access
- d. All stainless deck plates removed for vertical access
- e. Fire suppression valves to stay as practical; overhead entanglement items to be cut flush
- f. Stairwell to stay
- g. Cut off racks sticking out where banks have been removed for flush surface

31. 3 Sewer tanks: (empty)

- a. Hatched removed and hole enlarged for safer diver access

32. Compressor Room:

- a. 2 high volume RIX compressors to stay
- b. 2 low volume RIX compressors to stay
- c. Motors from compressors removed
- d. Remove cage doors all around room
- e. Filing cabinets removed
- f. Vertical hole cut between center stairwells
- g. GE Electrics motors to be removed
- h. Remove all stainless steel floor plating for vertical diver access

33. Engine Room:

- a. Cut vertical access from engine room to water via the Smoke / Exhaust stack
- b. Transformers and motor control boxes to be removed
- c. Shelving to stay; doors to be removed
- d. Laminate to be stripped off benches on side walls
- e. Sink stays
- f. Daily fuel tanks stay – cleaned; hatches removed
- g. Boiler water treatment plant stays – hatches removed or holes cut in for sea water access
- h. Panel boxes on walls stay – wires removed/gutted
- i. Exhaust and fee to be removed
- j. Panel boxes behind boilers to be removed for diver access
- k. File cabinets to be removed
- l. All tank hatch covers to be removed (unless ballast)
- m. Feed water tank stay – hatches open or holes cut in for sea water access
- n. Distillation water tank stay – hatches open or holes cut in for sea water access
- o. Evaporator 1 & 2 stay

- p. Electric motors to be removed
- q. Wall valves stay as possible, except where diver entanglement issues would be created
- r. Heat exchangers to be removed
- s. Caterpillar diesel engines stay – parts can be used for scrap value – cleaned

34. Propulsion Room – level 1:

- a. Remove beige vinyl floor covering
- b. Detroit Diesel engine – stripped but stays
- c. 3268A Generator Set stays – cleaned and all snag hazards cut off
- d. Power supplies stay, cleaned and gutted
- e. Overhead cutout for diver access – vertical
- f. Stainless Steel floor panels removed for access
- g. Caging behind power supplies removed

35. Propulsion Room – Level 2:

- a. Remove stainless steel plating from floors for diver access
- b. Fuel valves and tanks stay
- c. 2 x 1271 DC Detroit Diesel generators stay
- d. 4 electric motors to be removed
- e. Reduction Gears to stay - cleaned
- f. Main shaft to stay – cleaned
- g. Electric motors for fire pump to be removed
- h. Valve manifold boxes stays
- i. File cabinets removed
- j. Electrical boxes to stay – stripped and gutted
- k. Oil Cooler stays
- l. Transmission pump to be removed
- m. Electrical motors on Big Fire Pumps to be removed
- n. Shafts and propellers to stay - cleaned

36. Machine Shop:

- a. Overhead cutout for diver access – vertical
- b. Cincinnati 12 ½” 1963 Lathe stays
- c. Work shop cabinets (removable) to be removed

37. Crew Quarters:

- a. Lockers to be removed
- b. Grey colored bunks to stay unless loose or rotting
- c. Remove all hooks, catches, drawers at bottom of bunks – anything that might cause diver entanglement
- d. Air Conditioning unit to be removed
- e. Bunks near access to tanks to be removed
- f. Fuel tank covers to be removed and opened wider for diver access – where possible and not needed for ballast
- g. Fuel tanks for ballast to be filled with potable water (treated and sealed)

- h. Beige crew bunks and lockers removed to open up area

38. Crew's Lounge:

- a. Hatch to be removed
- b. All paneling removed and soft goods removed
- c. Metal tables and chairs to stay

39. Lower deck tank storage bank rack:

- a. Racks for banks to stay
- b. Remove all vertical pipes and snags
- c. Valves to remain

40. Diving Locker:

- a. Remove all furniture
- b. Stainless steel shelving to stay
- c. Main breaker boxes to stay – gutted of all wiring
- d. Cut vertical access in floor and to weather access for diver entry/exit
- e. Steel stowage cages to have all doors removed – contents cleaned out
- f. Stainless steel lockers to stay, unless quarters are too cramped for divers, then remove

41. Hydraulic Steering room:

- a. Motors to stay – cleaned
- b. Rudder to stay, to be locked in position
- c. Stainless steel floor plates to be removed for diver access
- d. Hatch covers to be removed, except as needed for ballast.
- e. Grills on exhaust vents to be removed
- f. Metal cages to be removed
- g. Diver access cutouts to be completed
- h. Door hatches (1/2 sized) to be removed and larger access holes to be cut for diver access
- i. Filing cabinets to be removed

42. Scuba storage tank room:

- a. Access holes to be cut between 2 sides of room at ceiling level
- b. Scuba tank racks to stay
- c. Fuel tanks to be filled with potable water, sealed and to stay
- d. All caging to be removed
- e. Stairwell to stay

43. Bilges:

- a. Floor paneling/plating to be removed

44. Bulkhead – Bow:

- a. Hole in bow for diver access

45. Hull:

- a. Hull cleaning to (no sooner than 3 weeks) prior to departing for Cayman waters

46. Measurements:

BOW:

Draft below waterline (light) 10 feet

Waterline to lowest deck (top) 15 feet (25 feet to bottom of keel)

Top deck to top of Bridge 23 feet (48 feet to bottom of keel)

Beam 40 feet

STERN:

Draft below waterline (light) 10 feet

Waterline to lowest deck (top) 15 feet (25 feet to bottom of keel)

TOP DECK:

Point of bow to Wheelhouse (highest point) 55 feet

Point of stern to Highest point on Booms 80 feet

MAXIMUM HEIGHT allowed: 48 feet from top to bottom of keel. Cut tops off masts/booms/a-frames as required in order to make the maximum height 48 feet.

Appendix 7b
CITA Souvenir items

Some items on the following list may contain hazardous materials. If so, they will be remediated during this phase of preparing the Kittiwake for reefing, with all HAZMAT handled, transported, disposed of and assigned to only authorized, licensed personal with the credentials to handle the specific type of HAZMAT. Once remediated, the following items should be stored in boxes to be transported on the Kittiwake during her tow to Cayman. The following items will not be sunk with the ship; they will be removed prior to her sinking in Cayman.

1. Telephone - Bridge
2. Depth sounder/Recorder - Bridge
3. All portals of copper or brass in decent condition - anywhere
4. Diving Locker Door – Diving Locker
5. Diving Locker Door Sign/plaque – Diving Locker
6. Rudder Key (Large) – Diving Locker
7. Shackles/Pulleys – Diving Locker
8. 2 hatches/doors
9. Any non-florescent lights that must be removed
10. Charter / Plotter – Navigation Room
11. Electric Compass/Mileage – Navigation Room
12. Compass / Gyro
13. Starboard – rudder control box (outside)
14. Navigation lights (stern)
15. Brass handles and power cutout switches - Radio transmitter room
16. Helle Engineering Inc. chamber control box – Recompression chamber room
17. PSI Pressure Gauges (several) – Recompression chamber room
18. Several Gates Valves – Fire Suppression – forward of chamber room
19. Con Box – Laundry Room
20. Brass fuse/junction boxes – Sonar room
21. Telephone – Anchor/Chain storage (bow)
22. Telephone – Sick Bay
23. Telephone – Electronic Workshop
24. Bell on wall – Hospital chief room below decks
25. Gyro – Sperry Gyro Company MK14 – Gyro room, about waterline level
26. Brass telephone box and Call bell box – Gyro room
27. Loudspeaker – Electronic Workshop
28. 2 Fuel Filters (yellow/black) – compressor room & propulsion room
29. Brass bells on wall – Engine room
30. Governor box – Engine Room
31. Call Bell – Propulsion Room
32. Klaxson – Propulsion Room (lower level)
33. 2 Pressure Gauges - Lower deck tank storage bank racks

- 34. American Instrument Co. Oxygen Booster/Pump - Lower deck tank storage bank racks
- 35. Corblin (Paris) Membrane Compressor AOC250 – 1965 Serial #0383 - Lower deck tank storage bank rack
- 36. 2 large spotlights – currently in Diving Locker area wrapped up
- 37. 2 Signs “Sub Squad 6” – round – on top of smoke stack